UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION

No. 5:11-CV-459-F

PENTAIR WATER POOL AND SPA, INC.; and DANFOSS DRIVES A/S, Plaintiffs & Counterdefendants,	)	
v.	)	ORDER
HAYWARD INDUSTRIES, INC.; and HAYWARD POOL PRODUCTS, INC., Defendants & Counterclaimants.	)	

This matter is before the court on motion [DE-7] filed by plaintiffs, Pentair Water Pool and Spa, Inc., and Danfoss Drives, A/S (collectively "Pentair") for issuance of a preliminary injunction against Hayward Industries, Inc., and Hayward Pool Products, Inc. (collectively "Hayward"). This is a patent infringement action in which Pentair alleges that Hayward's EcoStar® line of variable speed water pumps, the Eco Star® and EcoStar SVRS, and its ProLogic controller, infringe on several of Pentair's patents that are commercialized in Pentair's IntelliFlo®[1] and IntelliPro® variable speed water pump systems and IntelliTouch® controllers. Of the five patents-in-suit, only three are the subject of this motion for preliminary injunctive relief. Hayward contends that Pentair cannot show infringement and that there nevertheless are serious questions of the validity of Pentair's asserted claims. Hayward further contends Pentair cannot satisfy its burden to make a showing of a likelihood of irreparable harm and that both the balance of the equities and the public interest disfavor entry of an injunction.

The issues pertinent to the court's inquiry on this motion for preliminary injunctive relief have been fully briefed and were ably argued during a hearing conducted on January 12

[1] Pentair also produces and markets an IntelliPro® system under the brand, Sta-Rite Industries, Inc. Herein, unless otherwise indicated, IntelliFlo® includes IntelliPro®.

and 13, 2012. Pentair is anxious to receive a ruling prior to the January 24-26, 2012, Atlantic City Pool & Spa Expo to be held in Atlantic City, New Jersey.

Pentair asserts that, "in general terms, the patents-in-suit relate to variable speed swimming pool and spa pump technology, centralized control of the various components of swimming pools and spa systems, and detection of and response to problems and conditions that can arise in the operation of such systems." Pentair's Motion [DE-7], p. 2. Pentair contends that it, in collaboration with Danfoss, revolutionized the pool and spa pump industry and created a whole new market with the introduction of its IntelliFlo® variable speed pump system and IntelliTouch® controller.

I. Relevant Factual and Procedural History [2]

Pentair and Hayward are direct competitors in the swimming pool and spa pump market; there are other companies that also offer pool pumps but it appears that Pentair and Hayward are by far the most successful in the United States. The technology at issue here is relatively new, the industry having been virtually unchanged for about 50 years before introduction of the IntelliFlo® and IntelliTouch® products. Both parties' confidential materials tend to indicate that Pentair enjoys a significant majority of the market share but that Hayward relentlessly is attempting to increase its own share. Both companies operate production facilities in central North Carolina, but are out-of-state corporations.

A. Conventional Pool and Spa Pump Technology

Traditionally in the United States, most swimming pool and spa pumps are single-speed and are designed to operate at a constant speed, or dual speed with one alternative speed. This conventional system suffered from several drawbacks. For example, conventional pumps

[2] Except where indicated, the recitation of facts and procedural history contained herein rephrases generalities that are not currently in dispute or are not material to Pentair's motion seeking preliminary injunctive relief. Findings of material facts are contained in a separate section of this order.

offered only up to two predetermined speeds, one of which would be selected to correspond to the maximum pumping demands of the individual pool or spa. The installer or customer had to determine the appropriate horsepower of the pump to meet the needs and requirements of the pool, as horsepower was a primary means of controlling flow rate, or use standard calibrations that proved inappropriate for many applications. Variables, including volume and flow rate of water to be pumped, pressure required to pump the required volume of water at the correct rate, and other operational parameters, such as flow resistance from pipe friction, determined not only the correct of size of pump but also the proper settings for that pump's operation in its unique configuration and conditions. Once installed, conventional pumps typically may not readily be changed to accommodate changes in pool conditions, auxiliary equipment or pumping demands. The essentially wide-open-all-the-time operation of conventional pool pumps very often proved inefficient and costly, both in energy consumption and environmental impact.

B. Variable Speed Pump Technology

According to Pentair, beginning in the early 2000s, it embarked on a project to design a swimming pool and spa pump that readily could be adapted to communicate with various auxiliary devices to provide a suitable supply of water at a desired pressure and volume to various-sized pools equipped with different types of features. Working with Danfoss Drives of Denmark, Pentair designed a pumping system it named the IntelliFlo® pump and companion IntelliTouch® controller. Pentair has described the process as follows:

> This ground-breaking pump with an integrated digital controller was designed to allow creation of entirely new features in water pumps: conserving energy as never previously imagined or achieved; pumping water to multiple aquatic applications and devices; and being variably adjustable to a number of user defined speeds, quickly and repeatably [sic], over a range of operating speeds, to pump the water as needed as conditions changed. The pump also was to be responsive to a change of conditions (e.g., a blocked drain, clogged filter, jammed pump), user input instructions and communication with the auxiliary devices. Centralized control over a multitude of devices would allow the system to be easily adjusted as the environment or requirements of auxiliary devices changed.

Pentair Memorandum [DE-22], p. 6.

Pentair announced and began selling the IntelliFlo® variable speed pump and IntelliTouch® controller in 2006. Pentair contends it, together with Danfoss, started the variable speed pool pump design and development from scratch, devoting hundreds of man-hours and millions of dollars to the project. Additionally, Pentair has expended substantial additional funds since 2006 marketing the IntelliFlo® system, and maintains a large sales force and support staff.

The three patents-in-suit[3] at issue in Pentair's Motion for Preliminary Injunction are:

1. United States Patent No. 7,854,597 entitled PUMPING SYSTEM WITH TWO WAY COMMUNICATION (the " '597 Patent"), owned by Pentair and Danfoss;

2. United States Patent No. 7,815,420, entitled PUMP CONTROLLER SYSTEM AND METHOD (the " '420 Patent"), owned by Pentair; and

3. United States Patent No. 7,857,600, ENTITLED PUMP CONTROLLER SYSTEM AND METHOD (the " '600 patent").

Pentair has selected specific claims within each of the patents, upon which to base its motion for preliminary injunction. Pentair contends Hayward is infringing claims 1, 2, 23, 24, 25, 29, 30 and 34 of the '597 Patent; claims 1 and 4 of the '420 Patent; and claims 1 and 4 of the '600 Patent.

Hayward contends it independently launched development of a variable speed pool pump in October 2008, two years after Pentair's introduction of the IntelliFlo® and IntelliTouch® inventions. It explains that six years earlier, it had developed and introduced a variable speed version of its TriStar® hydraulic pumps, called TriStar Energy Solution®. The TriStar® variable speed pump admittedly was not commercially successful.

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[3] Pentair withdrew a fourth patent from the instant motion – the so-called '587 Patent – but it remains in the case for trial.

In order to compete with Pentair's Intelli-Flo® technology and offer its own energy efficient and environmentally-friendly pump, Hayward contends it built upon its TriStar® variable speed pump technology. Hayward announced its EcoStar® and EcoStar SVRS[4] variable speed pumps and companion ProLogic® controller in early August 2010.

Hayward adamantly denies copying Pentair's technology or marketing strategy. Each party claims its respective variable speed pool and spa pump is the most efficient in energy and cost savings and environmental responsibility in the market. Both the IntelliFlo® and the EcoStar® pumps reportedly have been recognized by the industry for innovation and efficiency.

C. The Lead-Up to This Litigation

Documents produced and depositions taken during the limited discovery period preceding the preliminary injunction hearing reveal generally that on August 3, 2010, Hayward issued a press release announcing the EcoStar® and EcoStar SVRS variable speed pumps and companion ProLogic® controller. Hayward began shipping its new EcoStar® pump system in September 2010, and has sold the system ever since. Sales of the EcoStar SVRS pump began in February 2011 and continue to the present.

Throughout the fall months of 2010, Hayward vigorously marketed its new line of variable speed pumps in full-page advertisements in leading industry trade magazines; Pentair continued to run its advertisements for the IntelliFlo® system in most of the same publications. In November 2010, both parties displayed and marketed their respective variable speed pool pump systems at the International Pool, Spa & Patio Expo in Las Vegas, and the 2010 Piscine World Swimming Pool Show in Lyon, France. In 2011, both parties again exhibited their products at these and other trade shows. The parties are looking forward to the Atlantic City and Orlando shows in early 2012.

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[4] The SVRS ("Safety Vacuum Release System") version of the EcoStar® was not available for purchase until early 2011.

Pentair's Product Manager for Pumps, Zack Pickard, first recalled hearing about the EcoStar® system from a Pentair sales representative in late 2010, about the time Hayward announced the pump's availability. Packard reported that he had difficulty obtaining specific information about the EcoStar® products and had trouble acquiring an EcoStar® pump until late 2010, at which time Pentair engineers began analyzing the EcoStar®'s technology and operation. In October and December 2010, Pentair's '420, ' 597 and '600 patents were issued.

In February or March of 2011, Hayward began also selling the EcoStar SVRS pumps. Due to adjustments and improvements in its manufacturing and supply processes, Hayward's EcoStar® and EcoStar SVRS variable speed pump sales increased handsomely through the summer of 2011, but did not meets the company's overly optimistic early internal projections for 2011. *E.g.*, Exhibit 4 to Dubis Decl. [DE-80], PX-111 (under seal).

About a year after Hayward began selling the EcoStar® variable speed pump and ProLogic® controller in August 2010, Pentair hired Dr. Edward Randolph Collins, Jr. ("Dr. Collins") to test and provide expert analysis of the technology and processes of the EcoStar® system, and to offer opinions as to possible infringement of Pentair's patents commercialized in the IntelliFlo® and IntelliTouch® products. On August 31, 2011, Pentair filed the Complaint [DE-1] initiating this litigation, alleging infringement of the four patents-in-suit by Hayward's sales of the EcoStar® variable speed pumps and ProLogic® controllers. On the same date, Pentair provided a copy of the Complaint to Hayward and, noting time is of the essence, requested that Hayward voluntarily and immediately cease and desist sales of the EcoStar® systems. *See* Exhibits PX-25 and PX-26 to Declaration of Melanie Black Dubis in Support of Pentair's Memorandum [DE-22].[5] By letter dated September 20, 2011, Hayward declined to

[5] Pentair's exhibits to Melanie Black Dubis's Declaration [DE-22] will be designated herein by "PX-##."

withdraw the EcoStar® products Pentair contends are infringing. Ten days later, Pentair filed this Motion for Preliminary Injunction [DE-7].

D. The Litigation

Although the details are more fully set forth elsewhere in the record, *see, e.g.*, Order [DE-103], during the ensuing sixty days or so, Hayward filed an Answer [DE-32] to the Complaint raising counterclaims seeking declaratory judgment that the four patents-in-suit are invalid, and that Hayward's products did not infringe any of the subject patents. On the last day it contends it could do so without first obtaining leave or consent, Hayward filed an Amended Answer and Counterclaims [DE-50] identical to the original pleading [DE-32], except it added a counterclaim alleging that Pentair is infringing its patent, United States Patent No. 6,026,804 (the " '804 Patent").

On October 13, 2011, Pentair instituted a lawsuit in the Central District of California, *Pentair Water Pool & Spa, Inc. v. Hayward Industries, Inc. and Hayward Pool Products, Inc.*, No. 2:11-CV-10280-GW-FMO, seeking a declaratory judgment that Pentair is not infringing Hayward's '804 Patent, and that the '804 Patent is invalid. The very next day, October 14, 2011, Pentair filed a Motion to Strike [DE-72] Hayward's Amended Answer and Counterclaims, or, in the Alternative, to Sever the '804 Patent counterclaim from this litigation and transfer it to the Central District of California where Pentair had initiated the declaratory judgment action hours earlier.[6] The court allowed Pentair's uncontested Motion to File Amended Complaint [DE-66] adding an allegedly related patent infringement claim concerning United States Patent No. 8,043,070 (the " '070 Patent"), against Hayward. By leave of court, Pentair's Amended Complaint [DE-112] was filed on January 17, 2012.

[6] This Motion to Strike still is in the briefing process and is not related to the patents at issue in Pentair's preliminary injunction motion.

In the meantime, the parties were engaged in briefing and teleconferencing with Magistrate Judge David Daniel, E.D.N.C., concerning Pentair's requests for expedited discovery on the preliminary injunction issues. Directing Hayward to forego exhibiting the accused devices at the impending November 24, 2011, trade show in Las Vegas, Judge Daniel ordered [DE-44] limited discovery under a tight time schedule.[7] The undersigned scheduled a hearing on the Motion for Preliminary injunction on January 12, 2012

Declarations were filed and depositions taken. Reams and reams of pleadings and supporting documentation were delivered to chambers as the parties supplied courtesy copies of every oversized filing. Pentair filed its Reply [DE-78/89] over Hayward's Objection and Motion to Strike [DE-94]. *See* Order [DE- 100] (denying Hayward's motion to Strike [DE-94] Pentair's Reply and voluminous supporting documentation [DE-78, -79, -[8]0, -81, -82, -83, -84, -85, -86, and -87]; court records revealed the mandatory electronic filing process had not completed until 45 seconds after midnight on the discovery deadline, December 30th, 2011). In preparation for the hearing on preliminary injunction, the court read all the motions and memoranda and most of the supporting documentation that had been filed in the case.

The hearing began at 10:00 am before the undersigned on Thursday, January 12, 2012. Extra tables and chairs were moved into the courtroom well to accommodate the bevy of attorneys who turned out for both parties. The court recessed at 6:00 pm and reconvened the next morning at 9:00. Prior to commencement of the hearing, Pentair had set up several variable speed pumps in the courtroom, one of which purportedly was configured as a working model of the IntelliFlo®, and one of which was an EcoStar® pump. Hayward objected to the

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[7] Hayward points out that it had offered to refrain from exhibiting at the Las Vegas trade show in exchange for Pentair's agreement to a period of limited expedited discovery and an enlarged period within which Hayward could respond to Pentair's preliminary injunction motion. *See* Hayward's Memorandum [DE-34], p. 3. Hayward complained that Pentair refused to accede to "any reasonable accommodation." *Id.*

presence of the pumps. The court did not compare the physical models to each other, but was able, through the parties' responses to specific questions, to identify discrete components and to better visualize the concepts described in the patents, the supporting literature, the documentation before the court and the attorneys' arguments. Counsel presented well-organized arguments in a manner that was admirably limited to the pertinent issues before the court, and made excellent use of summaries, illustrations and diagrams.

II. Legal Standards

A. Patent Infringement

Title 35 U.S.C. § 271 defines patent infringement stating, "whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a). This showing requires a party "to perform each and every step or element of a claimed method or product." *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378 (Fed. Cir. 2007) (citing *Warner–Jenkinson Co., Inc. v. Hilton Davis Co.*, 520 U.S. 17, 29 (1997)). Pentair contends that Hayward's EcoStar® and EcoStar SVRS pumps and companion ProLogic® controller literally infringe the three patents pertinent to the motion for preliminary injunction.

In patent cases, "a preliminary injunction . . . involves substantive matters, unique to patent law and, therefore, is governed by the law of [the Federal Circuit]." *Hybritech, Inc. v. Abbott Labs*, 849 F.2d 1446, 1451 n.12 (Fed. Cir, 1988). Purely procedural questions, however, are controlled by the law of the appropriate regional circuit. *See id.*

B. Preliminary Injunction Factors

A patentee is entitled to a preliminary injunction for alleged patent infringement if it can establish four factors: (1) a likelihood of success on the merits; (2) a likelihood of irreparable harm if an injunction is not granted; (3) a balance of hardships; and (4) the impact of an

injunction on the public interest. *Winter v. Natural Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008); *AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1049 (Fed. Cir. 2010). A preliminary injunction cannot issue, however, if the patentee fails to establish *both* of the first two factors. *Amazon.com, Inc. v. Barnesandnoble.com, Inc*, 239 F.3d 1343, 1350 (Fed. Cir. 2001).

1. *Claim Construction*

Before attempting to assess whether a defendant is infringing the patent at issue or if the patentee can demonstrate that any showing of invalidity lacks substantial merit, the court must construe the claims at issue, giving the claims the same meaning for purposes of both the infringement and the validity analyses. *Amazon.com*, 239 F.3d at 1351 ("Only when a claim is properly understood can a determination be made whether the claim 'reads on' an accused device or method, or whether the prior art anticipates and/or renders obvious the claimed invention"). If literal infringement is alleged, the patentee must demonstrate that the defendant's device contains every limitation of the allegedly infringed claims. *See Warner-Jenkinson Co.*, 520 U.S. at 29, which is a question of fact, *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998). *See also Searfoss v. Pioneer Consol. Corp.*, 374 F.3d 1142, 1148 (Fed. Cir. 2004) (the court then must compare the patent claims as properly construed, limitation-by-limitation, to the features of the allegedly infringing device).

Claim construction involves determining what the language of the claim means, and courts generally use three sources to determine the meaning: the claims themselves, the specification, and the prosecution history. These sources are the "intrinsic evidence" of a claim's meaning. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995) (citation omitted).

Claim terms should usually be given their ordinary and customary meaning, which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention," who is likely to read the claim term in the context of the entire patent.

Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). It is elementary in the law of patents that claims must be read and interpreted in the light of specifications. However, "in looking to the specification to construe claim terms, care must be taken to avoid reading 'limitations appearing in the specification . . . into [the] claims.' " *Interactive Gift Exp., Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (quoting *Intervet Am. Inc. v. Kee-Vet Labs, Inc.*, 887 F.2d 1050, 1053 (Fed. Cir. 1989)). "We recognize that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). To locate that fine line, courts must look "to the specification to ascertain the meaning of the claim term as it is used by the inventor in the context of the entirety of his invention." *Id.* at 1187.

Usually, the intrinsic evidence should suffice to enable one to determine the meaning of a claim term. *Markman*, 52 F.3d at 986 (commenting that "ideally there should be no 'ambiguity' in claim language to one of ordinary skill in the art that would require resort to evidence outside the specification and prosecution history," citing the disclosure requirements of 24 U.S.C. § 112 (1994)). When intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence, such as expert testimony for purposes of claim construction. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

When necessary and in its discretion, a court may consider "extrinsic" evidence to determine the meaning of the claim language. *Markman*, 52 F.3d at 980 (citation omitted). Extrinsic evidence may be useful to explain scientific principles, technical terms, terms of art, and the state of the prior art at the time of the invention. *Id.* "While extrinsic evidence may be useful in shedding light on the relevant art, it is less significant than the intrinsic record in determining the 'legally operative meaning of disputed claim language.' " *Bushnell, Inc. v. Brunton Co.*, 673 F. Supp. 2d 1241, 1251 (D. Kan. 2009) (quoting *C.R. Bard, Inc. v. U.S.*

Surgical Corp., 388 F.3d 858, 862 (Fed. Cir. 2004))."Extrinsic evidence is that evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles." *Vitronics*, 90 F.3d at 1584. Prior art also may constitute extrinsic evidence. *See id.* at 1584-85.

2. *Likelihood of Success on the Merits*

Likelihood of success on the merits is the first factor for consideration. By definition, if the patentee is not likely to succeed at trial in proving infringement of its patent by the accused device, then the patentee cannot have been irreparably harmed thereby and is not entitled to a preliminary injunction against the alleged infringer.

To prove a likelihood of success on the merits, a patentee such as Pentair must show, first, that it likely will prove that the challenger, Hayward, infringes a patent-in-suit, *and* second, that its infringement claims likely will withstand Hayward's challenges to the validity of the patents-in-suit. *AstraZeneca*, 633 F.3d at 1050. The court views these matters in light of the burdens and presumptions that will inhere at trial. *See Gonzales v. O Centro Espirita Beneficente Uniao do Vegetal*, 546 U.S. 418, 429 (2006).

At the preliminary injunction stage, an issued patent enjoys the same presumption of validity under 35 U.S.C. § 282 as at any other stage of the litigation. *Canon Computer Sys., Inc. v. Nu-Kote Int'l, Inc.*, 134 F.3d 1085, 1088 (Fed. Cir. 1998). However, if the alleged infringer raises a "substantial question" of either non-infringement or invalidity, the patentee, to carry its burden of showing a likelihood of success at trial, must establish that the challenger's defenses " 'lack[ ] substantial merit' " before an injunction may issue. *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1377 (Fed. Cir. 2009) (quoting *New England Braiding Co. v. A.W. Chesterton Co.*, 970 F.2d 878, 883 (Fed. Cir. 1992)). That is, the challenger may come forward with evidence of patent invalidity and if it does so, the patentee then has the burden of

responding with rebuttal evidence that may include analysis and argument. *Titan*, 566 F.3d at 1377.

> [T]he trial court "does not resolve the validity question, but rather must . . . make an assessment of the persuasiveness of the challenger's evidence, recognizing that it is doing so without all evidence that may come out at trial." . . . Instead of the alleged infringer having to persuade the trial court that the patent is invalid, at [the preliminary injunction] stage it is the patentee, the movant, who must persuade the court that, despite the challenge presented to validity, the patentee nevertheless is likely to succeed at trial on the validity issue.

Id. (quoting *New England Braiding*, 970 F.2d at 882-83).

The general rules applicable to injunctions in civil cases apply as well to injunctions in patent cases, *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 394 (2006), the test for which places the burden on the plaintiff to prove likelihood of success. In analyzing the likelihood of success factor, the court hears and carefully considers all the evidence at this early stage of the litigation and determines whether it is more likely than not that the alleged infringer will be able to prove by clear and convincing evidence at trial that the patents-in-suit are invalid. *Id.* at 1379. If the court concludes that the patentee has not presented contrary evidence, analysis and/or argument that establishes the challenger's "substantial question" regarding invalidity "lacks substantial merit," then the patentee, by definition has not shown a likelihood of success at trial on the merits, and a preliminary injunction may not issue. *See id.* at 1378.

3. *Likelihood of Irreparable Harm*

As the Supreme Court recently has articulated the preliminary injunction standard, a plaintiff must demonstrate more than the possibility of irreparable harm; the plaintiff must "demonstrate that irreparable injury is *likely* in the absence of an injunction." *Winter*, 555 U.S. at 22 (emphasis in original). "[W]hen the failure to grant preliminary relief creates the possibility of permanent loss of customers to a competitor or the loss of goodwill, the irreparable injury prong is satisfied." *Multi-Channel TV Cable Co. v. Charlottesville Quality Cable Operating Co.*, 22 F.3d 546, 552 (4th Cir. 1994) (internal citation omitted). Nevertheless,

the Federal Circuit has made clear that, "[w]hile this court has repeatedly upheld the right of a patentee to a preliminary injunction and sometimes spoken of the possible inadequacy of money damages, there is no presumption that money damages will be inadequate in connection with a motion for an injunction pendente lite. *Some evidence and reasoned analysis for that inadequacy should be proffered." Nutrition 21 v. United States*, 930 F.2d 867, 871–72 (Fed. Cir. 1991) (citation omitted) (emphasis added); *see also MicroAire Surgical Instruments, LLC v. Arthrex, Inc.*, 726 F. Supp. 2d 604, 636-39 (W.D. Va. 2010) (finding no irreparable harm to goodwill when it was "logically and factually unclear" how introduction of a competing product would injure the plaintiff's goodwill when plaintiff did not demonstrate more than the potential or lost sales or give a reasonable basis for its conclusion that its training programs would lose value).

4. *Balance of Equities*

Next, the court is required to "balance the competing claims of injury and must consider the effect on each party of the granting or withholding of the requested relief." *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 542 (1987). Should the plaintiff have met *Winter's* other three requirements and the court finds that the balance of the equities favors the plaintiff, then he is entitled to a preliminary injunction.

5. *Public Interest*

Finally, the court must "pay particular regard for the public consequences" in evaluating whether preliminary injunctive relief is appropriate. *See Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982) (citing *Railroad Comm'n v. Pullman Co.*, 312 U.S. 496, 500 (1941). "The patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time." *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1988) (citation omitted); *accord Pfizer, Inc. v. Teva Pharm., USA, Inc.*, 429 F.3d 1364, 1382 (Fed. Cir. 2005).

On the other hand, "[t]he public has a substantial interest in assuring free competition in the marketplace" among non-infringing products, *see World Health Prods., LLC v. Chelation Specialists, LLC*, No. 2:06 CV 633, 2006 WL 2527428 (D. Utah Aug. 28, 2006) (UP), because "the public benefits from lower prices resulting from free market competition," *Canon, Inc. v. GCC Int'l, Ltd*, 263 Fed. App'x 57, 62 (Fed. Cir. 2008) (UP). Pentair recognizes that, although rarely will the public interest be seriously affected by the grant or denial of an injunction, *Rite-Hite Corp. v. Kelley, Inc.*, 56 F.3d 1538, 1547 (Fed. Cir. 1995), "examples of such critical public interests include cases involving national security and public health and safety (*e.g.*, a vaccine, new cure or other vital medications)," Pentair Memorandum [DE-22] p. 28, none of which Pentair contends is at issue in this case.

III. DISCUSSION

This order presumes at least a passing familiarity with the facts of this patent infringement case, the parties' arguments, the motions pending, the complexity and volume of materials presented to the court and the desire by everyone involved that an order issue on the plaintiffs' Motion for Preliminary Injunction [DE-7] before the beginning of the Atlantic City, Pool and Spa Expo on January 24, 2012. The parties and United States Magistrate Judge David W. Daniel and his staff have done an extraordinary job of assembling, choreographing and presenting a staggering array of motions, exhibits, declarations, depositions, charts, Power-Point presentations, and kilos of supporting documentation materials culminating in a day and a half's worth of oral argument on January 12, 2012.

Before the instant motion even was ripe, in the weeks leading up to oral argument, and in the eleven days thereafter, as permitted by the demands of the court's criminal docket, the undersigned has been immersed in absorbing the pertinent facts, relevant issues, parties' relative positions, and controlling patent law jurisprudence involved in this case. Thanks to the parties' and Judge Daniel's inspired efforts, the court has reached a decision on the plaintiffs'

motion for preliminary injunction. Despite its own best efforts, however, there simply has been insufficient time and resources available to the court to complete a properly constructed and supported written order documenting and memorializing its decision.

In light of those circumstances, the court deems it to be in the best interests of the parties, the administration of justice, and the most efficient use of judicial resources to enter this summary order.

The court hereby enters the following:

IV. TENTATIVE FINDINGS & CONCLUSIONS

A. The '597 Patent

1. *Construction/Validity/Infringement*

a. Pentair's construction of the Claim 1 of the '597 Patent, as clarified in Dr. Collins's Supplemental Declaration [DE-81] is correct in the critical conclusions that Claim 1:

i. Does not require that the remote "master" pump controller usurp total or complete control of all capabilities and functions of the onboard "slave" pump controller when the master remote is enabled or connected to the pump/motor unit; the onboard pump controller at all times retains and maintains operation of variables not integral to the system's "optimization of energy consumption" (flow as determined by time and speed) functions; and

ii. Does not require that the patented devices transmit or receive real-time feedback from remotely located sensors in order to perform its "optimization of energy consumption" functions.

b. To the extent Hayward's evidence reveals vulnerability in the '597 Patent's Claim 1 or raises questions of invalidity, or anticipation/obviousness based on the Ehlers publication and/or the Danfoss Manuals, Pentair has presented credible rebuttal evidence sufficient to demonstrate those defenses lack substantial merit. *See Titan Tire*, 566 F.3d at 1377.

c. Pentair is likely to succeed on the merits at trial of demonstrating that Hayward's accused products infringe independent Claim 1 of the '597 Patent.

d. Because the court tentatively concludes that Pentair is likely to succeed on the merits of Claim 1, Hayward's defenses of invalidity, anticipation/obviousness based on the Ehlers publication and/or the Danfoss Manuals lack substantial merit as to the remaining seven asserted dependent claims of the '597 Patent;

e. Accordingly, the court tentatively concludes that Pentair is likely to succeed on the merits of the validity of the '597 Patent and Hayward's infringement of it by the EcoStar® variable speed pumps and ProLogic® controller.

2. *Likelihood of Irreparable Harm*

a. Pentair's evidence of the likelihood that it has or will suffer "irreparable harm" is entirely conclusory, speculative and unsupported by any reliable competent evidence that reasonably is or should be available at this stage of the litigation; Pentair's pump products manager was unable to provide either hard figures or a personal opinion of Pentair's current or projected market share in the variable speed pump market, and could not guess what main competitor Hayward's numbers might reflect;

b. Pentair's own evidence and argument that it is the leading supplier of variable speed pump technology in an industry where owner brand-loyalty is the norm and in which its name is synonymous with innovative high-quality variable speed pool and spa pumps, is out-of sync with its simultaneous claim that it likely will suffer irreparable harm from Hayward's continued sale of its products;

c. Hayward has presented confidential, tangible, well-supported and competent evidence supporting its contention that Pentair has not and will not likely suffer irreparable economic or intangible harm if a preliminary injunction is not entered; Hayward admitted overly-optimistic initial sales projections and possible product supply shortcomings following

initial roll-out. Hayward produced concrete estimates of its past, current and projected sales and market share, and offered opinions concerning those of its competitor, Pentair;

d. Hayward's evidence and argument concerning Pentair's delay in seeking preliminary injunctive relief militates against a viable perception by Pentair of threatened irreparable harm from Hayward's accused devices in the fourteen months it took for Pentair to file its motion for preliminary injunction;

e. The evidence now before the court leads unmistakably to the tentative conclusion that Pentair is has not shown that it is likely to suffer irreparable harm in the sense or to the degree necessary to justify the imposition against Hayward of a preliminary injunction concerning its EcoStar® and EcoStar SVRS variable pool pumps, and ProLogic® devices pending trial. *See, e.g., MicroAire Surgical Instruments*, 726 F. Supp. 2d at 636-39.

3. *Balance of the Equities*

a. At this point, there does not appear to be much if any tipping of the scales one way or the other;

b. The weight of Pentair's likelihood of success on the merits of the validity and enforceability of '597 Patent is counterbalanced by such burden as Pentair's delay in pursuing an injunction may have on Hayward's ability to move forward.

4. *Public Interest*

a. Pentair enjoys the strong public interest in the law's protection of an inventor's right to exclusivity for a limited period of time that "encourages both the creation and the public disclosure of new and useful advances in technology." *Pfaff*, 525 U.S. at 63.

b. Hayward's argument in favor of robust competition in the marketplace is bolstered by the especially strong public interest in the development of technology that conserves valuable environmental and economic resources.

c. Because the court has concluded that Pentair has not demonstrated the necessary likelihood irreparable harm, and that the subject matter of the patents-in-suit and accused devices address matters of public interest in cost and energy conservation, the court tentatively finds that the public interest factor *slightly* favors Hayward.

The court's balancing of the factors leads to the conclusion that, on the present record, Pentair's likelihood of success on prosecuting the merits of its infringement claims against Hayward on the '597 Patent is substantially outweighed by Pentair's failure to project even a colorable showing of the likelihood of irreparable harm, and the court's tentative conclusion that the public interest slightly tips in favor of Hayward.

B. The '420 Patent

1. *Construction/Validity/Infringement*

a. The '420 Patent describes a device and method for detecting an overheat condition of a motor that shuts the motor off when a heat sink senses an operating temperature that exceeds a (first) predetermined upper limit, then continues monitoring the temperature of the motor until the heat sink senses that the motor temperature has cooled to or below a second predetermined temperature ("limp mode temperature limit"), at which the device attempts to restart the motor. The patent also calls for the generation of fault condition codes and alerts. *See* Claim 4. The '420 Patent is a safety device and method.

i. The term "limp mode temperature limit" is a second, predetermined *temperature value* at which a shut-down motor connected to a pump safely attempts to restart after an overheating. Claim 1 of the '420 Patent requires monitoring motor temperature by a heat sink on a controller physically attached to the motor; shutting down the drive to the motor once the heat sink temperature [measuring motor temperature] is raised above a [first, predetermined] temperature upper limit; continuing to monitor the heat sink temperature after the drive is shut down; and attempting to restart the drive to the motor when the heat sink

temperature falls below a [second, predetermined] "limp mode temperature limit." Collins Supp. Decl. [DE-81], ¶ 140.

ii. Claim 1 of the '420 Patent does not require a third, intermediate *operating* mode, a "limp mode," to occur when the heat sink detects motor overheating prior to shutting off the motor. Hayward's insistence that a motor actually enter into an intermediate "limp mode" before shutting off is supported only by FIG.4 of the '420 Patent, which is directed to a distinct embodiment that requires additional features not contained in the Claim 1 language.[2] The specifications explicitly note that, "the embodiments . . . as disclosed in the accompanying drawings are illustrated by example only. The various elements and combinations of elements described. . . can be arranged and organized differently to result in embodiments which are still within the spirit and scope of the present invention. '420 Patent, Exh. PX-2 to Dubis Decl.[DE-22], col. 2, ll. 27-33.

iii. The language of Claim 1 plainly calls for a motor re-start attempt after shut-down, once the heat sink detects that the motor temperature is at or below the predetermined "limp mode temperature limit." Hayward's interpretation of the claim, as illustrated by the embodiment depicted in FIG. 4, does not require the motor to attempt a restart after operating in limp mode and then shutting down.

b. The parties agree that the EcoStar® variable speed pumps do not operate in a third "limp mode." *See* Hopkins Decl. [DE-53] ¶ 66-67. Rather, as Prof. Hopkins observed, "[a]s temperature increased in each test, the motor speed was monitored. Based on my

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[2] The FIG. 4 illustrated embodiment is the only one of 12 illustrations that described "a limp mode method of operation for use with the pump control system of FIG. 1." '420 Patent, Exh. PX-2 to Dubis Decl.[DE-22], col. 2, ll. 43-44; *id.* at FIG. 8, Sheet 7 of 12. Thus, while a device may be configured to slow an overheated motor to a third, intermediate "limp mode" before shutting the motor down as illustrated in FIG. 4, that step is not required by Claim 1 of the patent. *See, e.g.*, FIG. 8. "Limp mode temperature limit" is a measure of temperature value, not a distinct mode of motor operation.

observations, the motor speed remained substantially constant notwithstanding the increase in sensed temperature up to the point at which the pump shut down." Hopkins Decl. [DE-53], ¶ 64, p. 21. Hopkins reported his tests revealed that the EcoStar® pump motor shut down at about 82 degrees C, and attempted a restart sequence when it had cooled to about 70 degrees C. This operation is consistent with the method described in Claim 1 of the '420 Patent.

c. To the extent Hayward's evidence reveals vulnerability in the '420 Patent's Claim 1 or raises questions of invalidity, or anticipation/obviousness based on the Commander SE User Guide, Exh. DX-23 to Bromberg Decl. Notice [DE- 60], Pentair has presented credible rebuttal evidence sufficient to demonstrate those defenses lack substantial merit. *See Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1377 (Fed. Cir. 2009).

i. The Commander SE[3] User Guide lacks the element, required in Claim 1 of the '420 Patent, that the unit's controller be physically attached to the pump motor to detect a fault condition in the motor; the Commander SE is designed as a stand-alone unit electrically connected to the motor. *See* Collins Supp. Decl. [DE-81] ¶ 153 (citing Exh. E to Hopkins Decl., p.1).

ii. The Commander SE User Guide does *not* disclose that the unit continues to monitor motor temperature after an overheating condition has caused the motor to shut down; if an overheating condition is detected, the drive continues to operate by incrementally reducing switching frequencies within a range between two predetermined temperatures before the drive is tripped and generates a fault code. *See* Exh. E, Claim Chart for

[3] The Commander SE is a "variable speed drive for 3 phase induction motors from 0.24kW to 37 kW."

'420 Patent) to Hopkins Decl, [DE-53] p. 3 (copy of Table in Section 5.18, p. 44, of Commander SE User Guide).[4]

iii. While the Commander SE's process of incrementally reducing switching frequencies within a preset limit to avoid tripping the drive may be conceptually analogous to Prof. Hopkins' example of an embodiment of the '420 Patent that employs an extra "limp mode" speed of operation in an overheating event as illustrated by FIG. 4, the court has rejected Hayward's insistence that Claim 1 of the '420 patent contains an element requiring reduction to a separate mode of operation before motor shut-down on overheating.

iv. It does not appear that the term "reset" as used in the Commander SE User Guide has the same meaning as the term "restart" in Claim 1 of the '420 Patent, as Prof. Hopkins assumes. *See* Collins Suppl. Decl. [DE-81] at ¶ 161.

A. Dr. Collins notes the functional difference in the meaning of the two terms as they would be understood by a person of ordinary skill in the art. Specifically referring to the Commander SE, Dr. Collins explains, "the fault code generated by the trip will prevent the drive from being restarted. By 'resetting' the drive, the error/fault code is cleared from the controller. This does not restart the drive, but simply allows the drive to be restarted." Collins Suppl. Decl. [DE-81] at ¶ 160.

B. Moreover, the court is persuaded by Dr. Collins's explanation that an automatic *restart* function on an industrial motor drive would be inherently dangerous. He quotes Commander SE User Guide warning language that cautions, "[w]hen a trip occurs, the Commander SE will automatically *reset the control word* [fault code] to 0. This ensures

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[4] Rather, the Guide explains that the "Commander SE contains a heatsink thermistor that monitors the temperature of the drive's heatsink. If the *switching frequency* is set *above 3kHz* and the heatsink *temperature increases above set levels*, the drive will *reduce the switching frequency* in order *to prevent* the *drive from tripping* on heatsink over-temperature (OHt2). If the switching frequency is set to *3kHz* and the heatsink temperature increases *above* the *maximum allowable level*, the *drive will trip* on Oht2." *Id.* (Emphasis added).

that, for safety reasons, the Commander SE is in a safe, disabled state and *cannot restart immediately* when it is reset." *Id.* at ¶ 166 (emphasis added) (citation omitted).

d. Hayward's evidence supporting its argument that the Commander SE User's Guide anticipated the '420 Patent lacks substantial merit; accordingly, the court tentatively concludes that the '420 Patent is not invalid based on anticipation by the Commander SE User's Guide.

e. The court tentatively concludes, therefore, that Pentair is likely to succeed on the merits of its claim that the EcoStar infringes Claim 1 (and also Claim 4) of the '420 Patent.

2. *Likelihood of Irreparable Harm and Balance of Equities*

a. The court hereby ADOPTS and INCORPORATES as to the '420 Patent, its tentative findings and conclusions set forth above concerning the '597 Patent. In short, Pentair has failed to offer competent sufficient evidence suggesting a likelihood that it would suffer irreparable harm if a preliminary injunction were not granted, or that the balance of equities tips appreciably in its favor.

3. *Public Interest*

a. The court, in its discretion, tentatively finds that the public interest does not support one party's position over the other, except as noted in the court's discussion of public interest related to the '597 Patent. At this stage of the litigation, this factor is neutral.

For the foregoing reasons, therefore, the court tentatively concludes that, based on the burdens applicable at this stage of the litigation but anticipating those that will inhere at trial, the '420 likely will be found valid at trial and that the accused EcoStar® device infringes it. However, Pentair again has failed to make even a colorable showing of the likelihood it will suffer irreparable harm, which is essential to demonstrating the propriety of a preliminary injunction. The public interest factor is neutral.

C. The '600 Patent

1. *Construction/Infringement/Validity*

a. The '600 Patent, like the '420 Patent, was issued to Koehl in 2010. It describes a "method of detecting a foreign object obstruction in a pool or spa." At issue here is the following language contained in an element of Claim 1: "determining whether a fault condition has occurred due to the presence of a foreign object obstruction in the pool or spa based on the voltage, the current, and the power factor." Because both parties' technical witnesses agree that the language of the patent requires that the device detect a foreign object in the pool by measurement of *three* parameters, "voltage, current *and* the power factor," the court tentatively concludes that use of all three parameters is required by Claim 1.

b. Hayward contends its EcoStar® devices do not infringe the '600 Patent because (1) the EcoStar® variable speed pump does not include the feature at all, and (2) the EcoStar SVRS variable speed pump including safety vacuum release system, detects the presence of a foreign object in the pool by measuring only *one* parameter, that being current. *See* Hopkins Decl. [DE-53] at ¶ 92.

i. Prof. Hopkins did not actually test either the EcoStar® or the EcoStar SVRS variable sped pump. He relied for his conclusions on conversations he had with "Steve the designer" at Hayward, who explained that the pump detected a "differential in current," Hopkins Depo., Exh. 17 to Dubis Decl. [DE-80] PX-138, at pp. 303-09, and if the current dropped by ten per cent "based on a repetitively-measured ten-minute running current average, the pump recognizes a fault condition and shuts down the motor." Hopkins Decl. [DE-53] at ¶ 92.

ii. After submitting his initial Declaration, Exh. to Pentair Memorandum [DE-22], Dr. Collins was able to perform testing on an EcoStar SVRS variable speed pump. He

declares that his testing on the product independently confirmed his earlier conclusion that the EcoStar® and EcoStar SVRS (the EcoStar® pumps) infringe the '600 Patent.

iii. The court tentatively credits the detailed analysis contained in Dr. Collins's Supplemental Declaration explaining the calculation and significance of the "power factor" as one of three variables sensed by the EcoStar® pumps and required by Claim 1 of the '600 Patent. While the exact elements, processes and algorithms involved performing the sensing operation are frankly beyond the court's current ability to fully understand, the court perceives that Pentair has explained how the EcoStar® pumps in fact make use of all three required parameters in detecting a foreign object obstruction *in the pool*, generating a fault code, and shutting down. The EcoStar® pumps incorporate a power factor correction ("PFC") circuit (or chip) that holds a power factor and the dc bus voltage nearly constant, so that if there is an obstruction in the pool, the "load," measured in watts, will change, indicating a change directly related to current. *See id.* at ¶¶ 178-81. Specifically, Dr. Collins states,

> In the context of detecting a foreign object obstruction based on voltage, current and power factor, as required by claim 1 of the 600 patent, the fact that the PFC circuit determines a power factor and provides for a constant voltage, enables the controller to compare the current to a threshold and shut down the motor if the current exceeds the threshold. Without the PFC circuit, a linear mathematical relationship among certain variables and the real power ***P*** would ***not*** be present, potentially leading to faulty-operation and nuisance shutdowns.

Id. at ¶ 181.

iv. At the hearing on motion for preliminary injunction, Hayward's counsel argued, consistently with Prof Hopkins' theory, that Hayward's pumps do not infringe because they sense only *current*, as the PFC chip is holding the power factor and voltage constant.

c. The court has been unable to gain a sufficiently clear understanding of the parties' contentions concerning the validity/infringement issues related to the '600 Patent, because of the complexity of the scientific, mathematical and technical explanations and

differentiations offered in the materials produced and the arguments of counsel. In its discretion for purposes of the instant order, the court affords Pentair the benefit of the doubt and assumes the 600 Patent is valid, and that its is infringed by Hayward's EcoStar® and EcoStar SVRS variable speed pumps. For this purpose, therefore, the court tentatively concludes that Pentair has sufficiently demonstrated a likelihood of success on the merits with regard to its claim that Hayward infringes the '600 Patent.

2. *Likelihood of Irreparable Harm and Balance of Equities*

a. The court hereby ADOPTS and INCORPORATES as to the '600 Patent, its tentative findings and conclusions set forth above concerning the '597 Patent. In short, Pentair has failed to offer evidence suggesting the likelihood it would suffer irreparable harm if a preliminary injunction were not granted, or that the balance of equities tips appreciably in its favor.

3. *Public Interest*

a. The public interest is served by both Pentair's Intelli-Flo® and Hayward's EcoStar SVRS variable speed pumps, in that both are designed to implement life-saving technology by permitting a pool or spa pump system to shut down when foreign object obstruction (such as a human's body immobilized by suction over a pool drain) is detected. Except to the extent that more widespread use of this technology is in the public interest, the court in its discretion cannot say that this factor favors either of the parties. At this point in the litigation, the court tentatively finds the public interest factor to be neutral.

For the foregoing reasons, therefore, the court tentatively concludes that, based on the burdens applicable at this stage of the litigation but anticipating those that will inhere at trial, the Pentair has demonstrated a likelihood of success with regard to the validity of the '600 Patent and that the accused EcoStar® devices are infringing. However, Pentair again has failed to make even a colorable showing of irreparable harm, which is essential to demonstrating the

propriety of a preliminary injunction. The public's interest is well-served by the technology of the '600 Patent's life-saving function, but for the present inquiry, it is a neutral factor.

V. ORDER

As explained herein, the court has concluded that, notwithstanding Pentair's likelihood of success on the merits of its claims concerning the validity of the '597, '420 and '600 Patents and Hayward's likely infringement at least of independent Claim 1 of each (and Claim 4 of the '420 and '600 Patents), Pentair has not met its burden to demonstrate that it is likely to suffer irreparable harm if a preliminary injunction does not issue. Consideration of these tentative conclusions, the court's tentative conclusions concerning the balance of equities and public interest factors leads to the ultimate conclusion that Pentair has not shown entitlement to a preliminary injunction *pendente lite* against Hayward as to the '597, '420 and '600 Patents.

It therefore is ORDERED that Pentair's Motion for Preliminary Injunction [DE-7] hereby is DENIED.

SO ORDERED.

This the 23rd day of January 2012.

James C. Fox

JAMES C. FOX
Senior United States District Judge